

from Santiago, Mexico, lived for 9 years; and the golden-banded species from Guerrero, *Aphonopelma smithi*, lived for nine years. All of these may be considered as having attained an age of about 20 years.

MOLTING

The young tarantulas go through their first molt before they leave the cocoon, or immediately thereafter. The following year they molt 3 or 4 times; the tiny skins are easily overlooked. In the following year there are again 4 molts, and during the following three years there are 2 molts. After that there is one molt a years. A large female *Dugesiella crinita* from Tlahualilo, Mexico, old age. Rarely, mature females molt twice during the season, April to November, and, occasionally, a mature female misses a molt. This seems to be more common in the Mexican species than in native ones. "Señora Belmar" missed three molts during the fifteen years of her adult life. Another species, *Aphonopelma emilia*, apparently molts regularly once every other year.

Literature cited

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NEW SARCOPHAGINE FLIES (DIPTERA: SARCOPHAGIDAE)

H. RODNEY DODGE

BOX 97, PULLMAN, WASH.

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ABSTRACT

Sarcophaga downsi, new species, Venezuela; *Sarcophaga filamenta*, new species, Dutch Guiana (Surinam); *Endemimyia vaurieae*, new species, Mexico are new neotropical species described and figured from the male sex. *Sarcophaga (Idoneamima) footei*, new species, is described from male,

female and puparium, reared from snails, New York. The posterior spiracular concavity is extremely shallow in *footei* puparia.

Three of the new flies reported here are represented by uniques in the American Museum of Natural History, where these descriptions were prepared. The author expresses his appreciation to the museum authorities for the facilities and courtesy provided. Two are referred to *Sarcophaga* in its broadest sense, simply because they do not seem to pertain to any of the numerous restricted genera which have been proposed. The fourth species was reared from snails in New York.

Sarcophaga downsiana, new species

Figures 1 to 3

LENGTH 8 mm.; wing 7 mm. A black fly with bright golden pollinosity; 3 posterior dorsocentrals; wings clear, vein 1 bare; legs black, mid tibia with a comb, hind tibia non-villous; genital segments black.

MALE. Head with front at narrowest (before ocelli) 0.163 of head width; inner vertical large, outer vertical absent, ocellars weak, proclinate; frontal stripe black, parallel-sided, half the width of front at narrowest; parafrontofacials bright golden, with a row of minute black setules; frontal rows of 10-11 pairs, moderately divergent to middle of second antennal segment; antenna black, arista plumose; vibrissa at epistoma; facial ridge setuled 0.33 to lunule; cheeks 0.17 of head height, black haired; palpi black; occiput black-haired.

Thorax yellow pollinose, with 3 black stripes; chaetotaxy: aerostichals 3: 1, fine; dorsocentrals 3: 3, large; intraalars 2: 3; supraalars 3; humerals 3; notopleurals 4; posterior callus 2; scutellars 2 strong marginal, 1 fine apical, 1 fine preapical; sternopleurals 3, the middle lower than the others; propleuron, prosternum and mesosternum haired; hind coxae haired posteriorly. Wing clear, veins dark, vein 3 setuled 0.66 to cross vein, epaulet black; squama whitish, the lower lobe brownish discally. Legs black, mid femur with a comb of 6 spines; hind tibia non-villous.

Abdomen yellow pollinose, especially on sides, with 3 longitudinal black lines; third apparent tergite without median marginals; sternites 1-4 gradually decreasing in width, with fine, small, black hairs; sternite 5 elongate, pollinose, nearly devoid of hairs, with a very small, V-shaped notch. Genital segments black, yellow pollinose, the first with a marginal row of 8 bristles. Penis and forceps as figured, the penis two-segmented, with a large, anteriorly-directed ventralia from the base of the distal segment; claspers concealed in lateral view, about equal size and moderately curved.

Female unknown.

HOLOTYPE male, Cerro Avila, Caracas, Venezuela, April 14, 1957, 2000 meters alt., W. G. Downs collector, in American Museum of Natural History, through the courtesy of Dr. Downs.

Sarcophaga filamenta, new species

Figure 4

LENGTH 6 mm., wing 5 mm. A small, greyish fly with vein 1 setuled, hind tibia non-villous and genital segments reddish. The genitalia are unlike any other species known to the writer, the most prominent feature being a long, curved filament arising from the anterior face of the penis; this suggesting its specific name.

MALE Front at narrowest 0.216 of head width; frontal rows of 7 pairs, hardly diverging anteriorly; frontal vitta black, parallel-sided, 0.4 width of front at narrowest; parafaciofrontals silvery grey, with 2 rows black setules; proclinate fronto-orbitals absent; cheek 0.19 of head height, cheek and occiput white-haired; 2 rows of black postocular hairs; inner vertical large, ocellars small, proclinate.

Thorax grey with 3 black stripes; chaetotaxy: acrostichals 0:0; dorso-centrals 1:4; intraalar 0:1; supraalar 2; humerals 3; notopleurals 4; sternopleurals 3, the middle one slightly below the others and closer to the anterior; scutellars 2 marginal, 0 apical, 1 small subapical; pro-sternum, metasternum and hind coxae posteriorly setuled; propleuron bare. Wing hyaline, veins brownish, vein 1 setuled on basal half, vein 2 setuled to cross vein; epaulets black; squamae white, the lower lobe with a slight brownish cloud. Legs black, mid femur without a comb; tibiae non-villous.

Abdomen black, with the usual grey pollinose checkered pattern; third apparent tergite with strong median marginals; sternites 1-4 of about uniform width, clad with rather long black hairs on the sides, with a bare median stripe on sternites 2-4, the stripe becoming broader and shining on sternite 4; sternite 4 apically with a patch of dense bristles; sternite 5 broadly U-shaped, largely concealed, with a few small hairs on the arms. Genital segments equal sized, pollinose, first blackish, with a marginal row of bristles, the second red. Genital segments as illustrated (figure 4), the forceps much as in *Helicobia*, contiguous, finely haired; accessory plate triangular; distal segment of penis bears a long, curved filament; anterior clasper long and stout, with apex bent at right angle, in ventral view it is bent outwards somewhat at the angle.

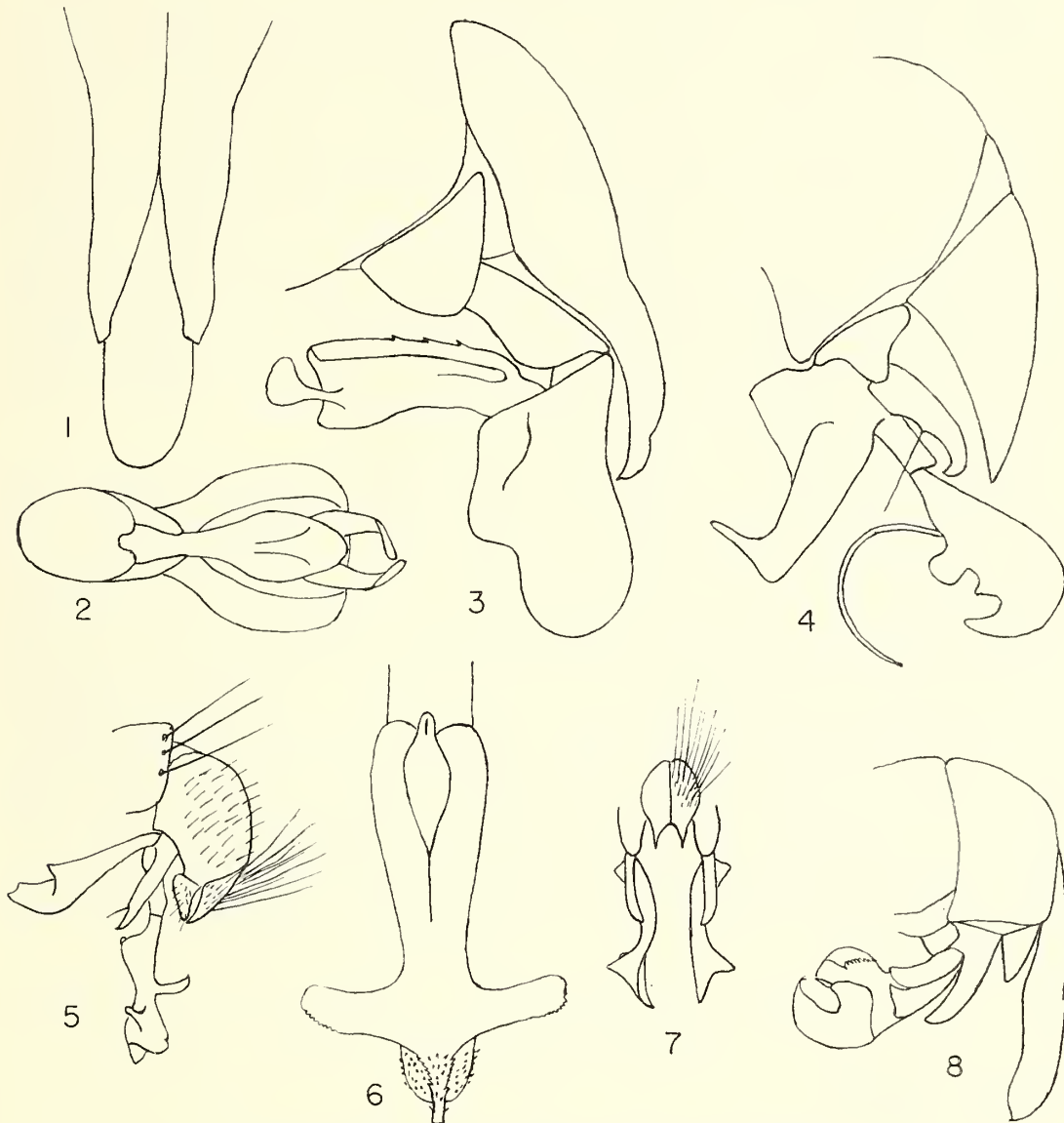
HOLOTYPE male, Dutch Guiana: "Paramaribo, cultuurtuin op laai pari, 14.IV.1940, Geijskes," in American Museum of Natural History. The label is handwritten and I am not certain of the spelling; the collector is Mr. D. C. Geijskes.

Endemimyia vaurieae, new species

Figures 5 to 7

LENGTH 11 mm., wing 9 mm. A medium sized fly with the appearance of *Oxysarcodexia* (sides of thorax and apex of abdomen yellowish pollinose), but frontal rows widely divergent below, facial ridge bristles 0.66 to lunule and 2 posterior dorsocentrals in a row spaced for 3, the middle bristle missing.

MALE Head 0.66 as long at antennal axis as high; front at narrowest 0.172 of head width; inner vertical large, outer vertical undifferentiated; ocellar rather large; frontal stripe black, gradually widening anteriorly, at narrowest half the width of front; frontal rows of 13 pairs, widely divergent in the lower 3 pair, attaining apex of second antennal segment; lunule recessed; antenna black, third segment 5:1, arista densely plumose



EXPLANATION OF THE FIGURES

FIGURES 1-3, *Sarcophaga downsiana*, new species. Figure 1, posterior view of apices of forceps and penis; Figure 2, lateral view of genital complex; Figure 3 apical view of penis.

FIGURE 4, *Sarcophaga filamenta*, new species. Lateral view of genital complex.

FIGURES 5-7, *Emdenimyia vaurieae*, new species. Figure 5, lateral view of genital complex; Figure 6, anterior view of distal segment of penis; Figure 7, ventral view of forceps and claspers.

FIGURE 8, *Sarcophaga (Idoneamima) footei*, new species. Lateral view of genital complex.

on basal 0.75, the dorsal rays in a double row for a distance from the base. Parafrontofacials yellow pollinose, with a row of minute black setules, abbreviated below; postocular orbits yellow; clypeus moderately depressed, vibrissa at epistoma; facial ridge setuled 0.66 to lunule; cheeks yellowish, 0.21 of head height; cheeks and occiput black-haired, a few white hairs about the neck; palpi black, equal to third antennal segment.

Thorax black, greyish above with 3 black stripes, becoming yellowish pollinose on the sides. Chaetotaxy: acrostichals 3:2, anterior fairly strong, posterior very strong; dorsocentrals 3:2, posterior 2 in a row spaced for 3, the middle absent, or possibly displaced to the acrostichal row; intraalars 2; supraalars 3, humerals 3, notopleurals 4, posterior callus 2; scutellars 3 marginal, 1 preapical and an apical hair-like pair which are not crossed but upturned; propleuron densely haired; prosternum haired; sternopleurals 3, the middle one slightly below the others and nearer the anterior; metasternum setuled; hind coxa setuled posteriorly. Wing hyaline, with dark brown veins; vein 3 setuled 0.5 to cross vein; vein 1 bare; epaulet black; squamae whitish, lower lobe with dark hairs, distinct from microtrichia, on its outer margin. Legs black, mid femur without comb; hind tibia sparsely villous, mid tibia non-villous.

Abdomen black with the usual checkered pattern, grey pollinose above on first 3 segments, the 4th yellow pollinose above, yellow pollinosity on sides of third and fourth segments. Sternites 1-4 with fine, sparse, black hairs, the posterior margin of 4 with a few longer ones; sternite 5 reddish, shining, narrowly cleft to base, very sparsely clad with fine setules, its apex broadly V-shaped, slightly protuberant in profile. Genital segments reddish brown, setuled, yellow pollinose, the first with an interrupted marginal row of 4 pairs weak bristles; genital segments as illustrated (Fig. 5-7); forceps small, not exceeding the accessory plate, parallel, the tips separated on apical 0.2, base strongly haired; penis 2-segmented, the distal segment with a blade-shaped hooked process on its back and 2 black lateral arms subapically; anterior clasper immense, black, broadened and forked on apical half.

HOLOTYPE male "Tamazunchale, Mex., 350 feet alt., 9.IX.1947, C. & P. Vaurie, F. Johnson Donor," in American Museum of Natural History.

This species resembles *E. myersi* (Curran) and *spinosa* Lopes in its elongated antenna 3, long bristled facial ridges, setulose propleura and unusual chaetotaxy of the postnotum (arostichals and dorsocentrals). It differs by the "trilobed" distal segment of the penis, the immense anterior clasper, and the better differentiated anterior acrostichals.

Sarcophaga (Idoneamima) footei, new species

Figure 8

LENGTH 10 mm., wing 9 mm.

MALE Front 0.171 of head width; frontal rows of 13 pairs, widely di-

verging toward lunule. Thoracic chaetotaxy: acrostichals 0:1; dorso-centrals 3:3; intraalars 1:2; supraalars 2:3; humerals 3; notopleurals 4; posterior callus 2; scutellars 3 marginal, 1 preapical, and moderate sized, cruciate apical pair. Wing hyaline, veins dark brown, third vein setuled at base. Legs black, bristly, mid femur without comb, hind tibia non-villous.

Abdomen black with the usual checkered pollinose pattern; genital segments red, the first pollinose, with a marginal row of bristles, segment 2 shining, yellow-red. Forceps black, slightly bent, united for 0.66 their length at base, claspers subequal, anterior pair slightly larger; penis with claw terminating in a pair of very fine filaments; anterior lobe with a thin, translucent median keel, on either side of which a finely frayed margin.

FEMALE Front 0.286 of head width, with 2 proclinate fronto-orbitals; otherwise similar to the male, with the usual sexual differences.

Puparium 9 mm. long; posterior spiracles in a very shallow, flat or "convex concavity" bordered by a circular, slightly raised and nearly smooth rim; anterior spiracles projecting, ear-shaped, with numerous pores.

HOLOTYPE male and allotype female, Mt. Pleasant, Tompkins Co., N.Y., April 22, 1957, B. A. Foote, with pinned puparia, "1-V-57, F-5709C," reared from snails, in Cornell University collection.¹

PAPATYPE, one female, same data as above, in United States National Museum.

This species keys in Dodge (1956, page 244) to couplet 22 of the first key, where it is distinguished by the hind tibia non-villous. In the alternate keys it runs to *parallela* and *sudiai* in couplet 3 and resembles *parallela* in having forceps slightly bent but differs from it by having no constriction in the forceps at the bend, as seen in posterior view.

Literature Cited

Dodge, H. R., 1956. A new sarcophagid genus with descriptions of fifteen new species. *Ann. Ent. Soc. Amer.*, 49 (3): 242-263.

¹ Dr. Foote informs me in correspondence that Rearing No. F-5709C is "one male, two females from a cleaned out shell of *Triodopsis notata* Deshayes collected. 22 April, 1957. Relationship to snail unknown. Puparia were found in the shell."